

REMARKS

Applicants acknowledge the allowance of claims 13-20. Claims 1-20 remain pending in the application.

Reexamination and reconsideration are respectfully requested in view of the following Remarks.

35 U.S.C. § 102 & 103

The Office Action rejects claims 1-6, 11 and 12 under 35 U.S.C. § 102 over Rolfson U.S. Patent 6,181,060 (“Rolfson”), and claims 7-10 under 35 U.S.C. § 103 over Rolfson in view of Wolf, “Silicon Processing for the VLSI Era,” Vol. 2, p. 238 (1990) (“Wolf”).

Applicants respectfully traverse those rejections for at least the following reasons.

Claim 1

Among other things, the method of claim 1 includes forming a polishing protection layer on the substrate, including over the conductive layer, whereby the polishing protection layer presents a step between a portion of the polishing protection layer lying directly over the substrate and a portion of the polishing layer lying over the conductive layer; and forming a step compensation layer on the polishing protection layer that reduces the step presented by the polishing protection layer.

Applicants respectfully submit that no such combination of features is disclosed by Rolfson.

The Office Action identifies element 18B in Rolfson as supposedly corresponding to the recited polishing protection layer, and 18C as supposedly corresponding to the recited step compensation layer.

Applicants respectfully disagree.

At the outset, claim 1 recites “a portion of the polishing protection layer lying directly over the substrate.” However, as clearly seen in the cited FIG. 2, no portion of insulating layer 18B in Rolfson lies directly over the substrate 12. So, insulating

layer 18B cannot possibly correspond to the recited polishing protection layer that includes a portion “layer lying directly over the substrate.”

Therefore, for at least this reason, Rolfson does not disclose the method of claim 1.

Furthermore, claim 1 recites that forming a step compensation layer on the polishing protection layer that reduces the step presented by the polishing protection layer. However, as clearly seen in the cited FIG. 2, the insulating layer 18c does not reduce the step presented by the (so-called) polishing protection layer 18b. Indeed, layer 18c clearly has a uniform thickness, and is even referred to in the specification as being “conformal” (see e.g., col. 14, lines 32-34; col. 6, lines 22, 56, 58). Compare this, for example, with an exemplary embodiment of the claimed step compensation layer 106 shown in FIG. 3C of the Applicants’ specification.

Therefore, for at least this additional reason, Rolfson does not disclose the method of claim 1.

Moreover, the method of claim 1 includes etching away part of the exposed conductive layer to form a conductive pattern on the substrate.”

The Office Action completely fails to make any mention whatsoever of this feature. The undersigned attorney does not such a feature being disclosed by Rolfson.

Therefore, for at least this further reason, Rolfson does not disclose the method of claim 1.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that claim 1 is patentable over Rolfson.

Claims 2-6, 11 and 12

Claims 2-6, 11 and 12 depend from claim 1 and are deemed patentable for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Claim 11

Among other things, the method of claim 11 includes subsequently removing a remaining portion of the polishing protection layer from around the

conductive pattern.

The Office Action states that Rolfson discloses such a feature with respect to the step shown in FIG. 4.

Applicants respectfully disagree. Claim 11 depends from claim 1, which recites a separate step of “removing portions of the step compensation layer and the polishing protection layer to expose the conductive layer,” before “subsequently removing a remaining portion of the polishing protection layer from around the conductive pattern.” The Office Action states that the first step of “removing portions of the step compensation layer and the polishing protection layer to expose the conductive layer” is supposedly shown by Rolfson in FIG. 4. That leaves nothing in Rolfson that discloses the subsequent step of removing a remaining portion of the polishing protection layer from around the conductive pattern.

Applicants respectfully submit that Rolfson does disclose any process including both recited steps of claim 11.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claim 11 is patentable over Rolfson.

Claims 7-10

Claims 7-10 depend from claim 1. Applicants respectfully submit that Wolf does not remedy the shortcomings of Rolfson as set forth above with respect to claim 1 and are deemed patentable for at least the reasons set forth above with respect to claim 1, and for the following additional reasons.

Claims 9-10

Among other things, in the methods of claims 9-10, etching away part of the exposed conductive layer to form a conductive pattern comprises etching the step compensation layer, the polishing protection layer and the conductive layer using a second planarization process.

As explained above with respect to claim 1, Rolfson does not even etch away part of the exposed conductive layer to form a conductive pattern. The Office Action fails to explain why anyone reading Wolf would have been motivated to modify

Rolfson to do so. So, Applicants respectfully traverse the proposed modification of Gray with Rolfson's teachings.

Accordingly, for at least these additional reasons, Applicants respectfully submit that claims 9 and 10 are each patentable over the prior art.

CONCLUSION

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1-20, and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283-0720 to discuss these matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, P.L.L.C.

Date: 26 January 2006

By: 

Kenneth D. Springer
Registration No. 39,843

VOLENTINE FRANCOS & WHITT, P.L.L.C.
One Freedom Square
Suite 1260
11951 Freedom Drive
Reston, Virginia 20190
Telephone No.: (571) 283-0720
Facsimile No.: (571) 283-0740